Volunteer Lake Assessment Program Individual Lake Reports

JENNESS POND, NORTHWOOD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,837	**Max. Depth (m):**	8.5	**Flushing Rate (yr^{1})**	1.6
Surface Area (Ac.):	232	**Mean Depth (m):**	2.7	**P Retention Coef:**	0.68
Shore Length (m):	6,100	**Volume (m^{3}):**	2,535,500	**Elevation (ft):**	657

TROPHIC CLASSIFICATION

Year	Trophic class
1991	MESOTROPHIC
2009	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

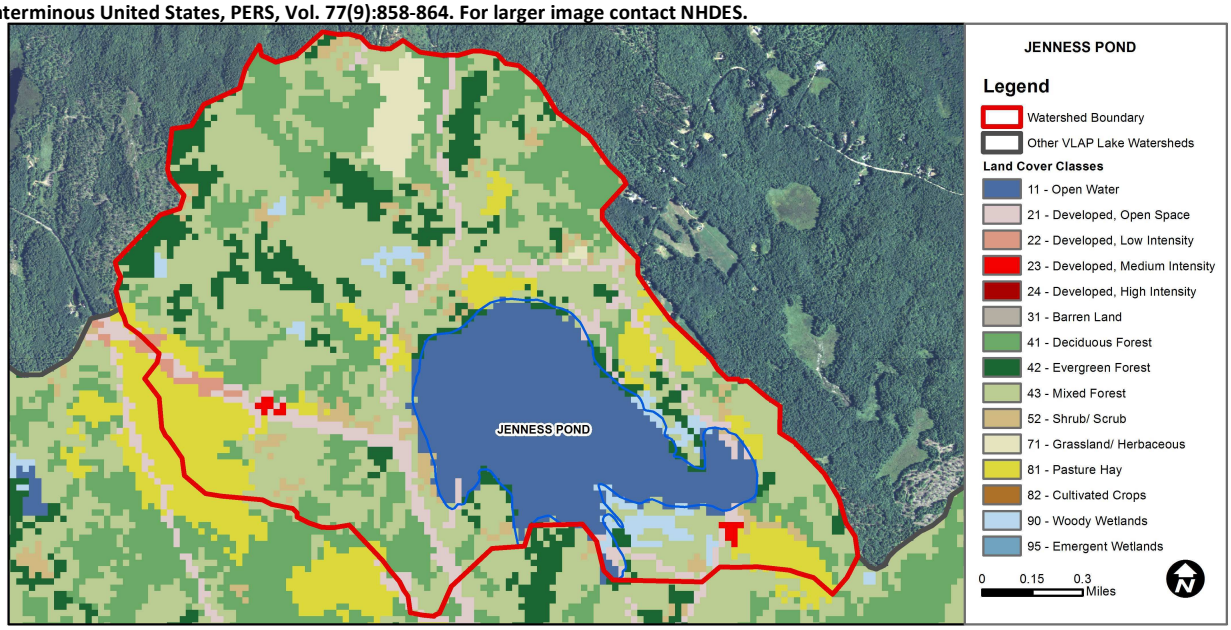
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	The calculated median is fewer than 5 samples but > indicator and the chlorophyll a indicator is okay. More data needed.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Cautionary	The calculated median is fewer than 5 samples but > indicator. More data needed.
Primary Contact Recreation	Escherichia coli	Bad	There are >=1 exceedance(s) of the geometric mean and/or >=2 single sample criterion exceedances. One or more exceedance is >2X criteria.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

JENNESS POND BEACH	Escherichia coli	No Data	No data for this parameter.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	17.4	Barren Land	0	Grassland/Herbaceous	1.99
Developed-Open Space	5.42	Deciduous Forest	16.78	Pasture Hay	8.14
Developed-Low Intensity	0.46	Evergreen Forest	8.74	Cultivated Crops	0
Developed-Medium Intensity	0.27	Mixed Forest	35.65	Woody Wetlands	2.06
Developed-High Intensity	0	Shrub-Scrub	3.04	Emergent Wetlands	0

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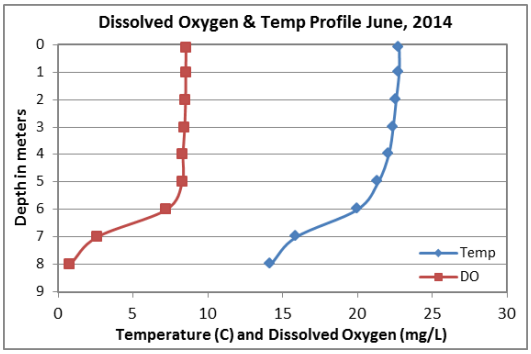
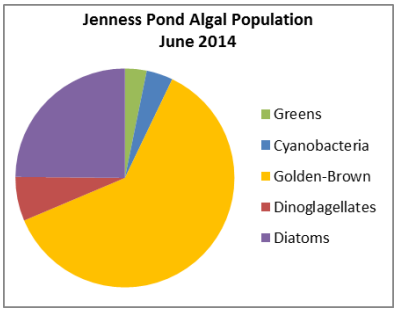
Jenness Pond, Northwood

2014 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were low in June and less than the state median. Historical trend analysis indicates highly variable chlorophyll levels since monitoring began. The June phytoplankton sample indicated that Golden-Brown algae were dominant and this is a typical dominant algae in early summer.
- **Conductivity/Chloride:** Deep spot and Outlet conductivity and chloride levels were slightly greater than the state medians but not above a level of concern. Historical trend analysis indicates significantly decreasing (improving) epilimnetic (upper water layer) conductivity since monitoring began. We hope to see this continue!
- **Total Phosphorus:** Epilimnetic, Hypolimnetic (lower water layer) and Outlet phosphorus levels were in a low to average range in June. Epilimnetic phosphorus levels were less than the state median and historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years.
- **Transparency:** Transparency measured without the viewscope (NVS) was slightly better than the state median in June and stable with 2012 and 2013 transparency measurements. However, historical trend analysis indicates significantly decreasing (worsening) transparency since monitoring began. Transparency measured with the viewscope (VS) was much better than without and may be a better representation of actual conditions.
- **Turbidity:** Epilimnetic, Hypolimnetic and Outlet turbidities were all low in June.
- **pH:** Epilimnetic pH was within the desirable range 6.5-8.0 units in June, however historical epilimnetic pH has been less than desirable. Historical trend analysis indicates highly variable epilimnetic pH since monitoring began. Hypolimnetic and Outlet pH levels were less than the desirable range in June.
- **Recommended Actions:** Increase monitoring frequency, typically once per month in June, July and August, to better assess summer seasonal and historical water quality trends and decrease data variability. The improving epilimnetic conductivity trend is encouraging and we hope to see this continue. Average pond chlorophyll levels have generally remained higher since 2009 indicating an increase in algal growth in the pond. The increased frequency and intensity of storm events and resulting stormwater runoff may be transporting excess nutrients into the pond that promote algal growth. Educate lake and watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "NH Homeowner's Guide to Stormwater Management". Contact the VLAP Coordinator to request copies. Keep up the great work!





Station Name	Table 1. 2014 Average Water Quality Data for JENNESS POND								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	2.80	3.10	21	69.2	8	3.88	4.90	0.42	6.66
Hypolimnion				68.2	11			0.87	6.43
Outlet				69.5	9			0.29	6.33

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Improving	Data significantly decreasing.	Chlorophyll-a	Stable	Trend not significant; data highly variable.
pH (epilimnion)	Stable	Trend not significant; data highly variable.	Transparency	Worsening	Data significantly decreasing.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.